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"drive circuit" "firing cap" "reference voltage"

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**U.S. Pregrant Abstract 20040108698 (Full Text at USPTO) , 2004-06-10 (Class/Claims Vie**  
**Drive circuit for a firing cap of a vehicle restraint system**

Serial No: 723939  
 Series Code: 10  
 Filed: 2003-11-26

**Abstract**

A drive circuit for a firing cap, triggerable by an electric direct current firing pulse, of a vehicle restraint has a firing circuit which forms a series connection of a high side switch to the firing cap and to a low side switch. The firing circuit is connected between a supply voltage of a first potential, and a reference voltage of a second potential, in parallel with a capacitor that stores energy. The firing circuit being activated by a drive signal which is fed simultaneously to the high side switch and the low side switch, in order to feed a firing current to the firing cap during the firing pulse. In addition, in the firing circuit, a power switching element also connected in series with the high side switch and the low side switch in order to draw lost power from the firing circuit during the firing pulse.

U.S. Classification (main class in bold)	
<b>Class 280</b>	<b>LAND VEHICLES</b>
<b>29</b>	<b>WHEELED</b>
<b>727</b>	<b>Attachment</b>
<b>728.1</b>	<b>Inflatable passenger restraint or confinement or attachment</b>
<b>734</b>	<b>Responsive to vehicle condition</b>
<b>735</b>	<b>Electric control and/or sensor means</b>

International (IPC) Classification	<input type="button" value="和文IPC"/> <input type="button" value="中文IPC"/>
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**SECTION B** PERFORMING OPERATIONS; TRANSPORTING

**B 60** VEHICLES IN GENERAL

**B 60 R** VEHICLES, VEHICLE FITTINGS, OR VEHICLE PARTS, NOT OTHERWISE PROVIDED FOR

21/00 Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks

21/02 Occupant safety arrangements or fittings

21/16 Inflatable occupant restraints or confinements designed to inflate upon impact or impending impact, e.g. "air bags"

21/32 responsive to a vehicle condition which as to initiate inflation including electrical sensors to initiate inflation

**Assignee**

**Inventors**

**Correspondence**

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(Villach, AT)

LERNER AND GREENBERG, PA  
(P O BOX 2480, HOLLYWOOD, 33022-2480 FL US)

**Foreign Priority**

Number

102 55 115.4

Date

20021126

Authority

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integrated, thus allows **drive circuit** to be constructed with a ... When the **restraint** protection circuit has been activated, the condition can only be ...  
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✓ [Drive circuit device for inductive load - Patent 4845420](#)

In a **drive circuit** device for an inductive load, the inductive load and a detecting ... The **reference voltage** generating circuit 30 includes a field-effect ...  
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A~ [Patent 4458290: Circuit for controlling a DC electromagnetic brake](#)

2, a Circuit 6' for **restraining** the counter electromotive force is connected in ... via a resistor 77, to a **reference voltage** side of the DC power source. ...  
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A~ [Particular timing circuit - Patent Storm](#)

During the first time interval, a second **drive circuit** generates a second voltage. ... A liquid crystal display device for **restraining** a generation of ...  
[www.patentstorm.us/class/345/99-Particular\\_timing\\_circuit.html](#) - 46k - [Cached](#) - [Similar pages](#)

A~ [Means for combining selective and sustain signals - Patent Storm](#)

in the matrix display **drive circuit** with an energy recovery inductor (L1), ... first, A first pulse of A first voltage falls to A **reference voltage** is ...  
[www.patentstorm.us/class/345/68-Means\\_for\\_combining\\_selective\\_and\\_sustain\\_signals.html](#) - 37k - Supplemental Result - [Cached](#) - [Similar pages](#)  
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Self ✓ [US Pregrant 20040108698 - Drive circuit for a firing cap of a ...](#)

**Drive circuit** for a firing cap of a vehicle **restraint** system ... and a **reference voltage** of a second potential, in parallel with a capacitor that stores ...  
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[Michigan CrainTech](#)

... reducing the cost of the **drive circuit** since SCRs ... a tension level in the seat **restraint** system when ... voltage with an expected **reference voltage** that represents ...  
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... thus allows **drive circuit** to be constructed with a single chip. ... gain Gain bandwidth product **Reference voltage** [Crystal oscillator] Operating ...  
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[Electric power conversion systems patents 200509](#)

20050207182 - **Drive circuit** for a synchronous rectifier, ... 20050201125 - Power circuit **restraining** rush current: A power circuit for an electronic machine ...  
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... is integrated, thus allows **drive circuit** to be ... limiter, overheat protection, motor **restraint** protection, etc ... **Reference voltage** Design target value -5% VREG/2 5 ...  
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... thereby reducing the cost of the **drive circuit** since SCRs ... a tension level in the seat **restraint** system when ... comprising a housing for an inflatable **airbag** and a ...  
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**Drive circuit** for a **firing cap** of a vehicle **restraint** system ... 728.1, Inflatable passenger **restraint** or confinement (eg, **air bag**) or attachment ...  
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### [5184350 Telephone communication system having an enhanced timing ...](#)

... output current from an interface **drive circuit** 307/540 ... 112 5183979 Elevator governor rope **restraint** when elevator ... 5183615 Molding method of **air bag** cover 264 ...  
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### [5309569 Self-configuring bus termination component 395/325 5309568 ...](#)

... reproducing device including novel **drive circuit** 360/67 ... for a supplemental inflatable **restraint** system 307 ... Hermetically sealed container for **air bag** inflator 422 ...  
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### [ABC analysis ABC indicator ABC powers ABC weapons ABS motor relay ...](#)

... address display address **drive circuit** address editing address element address ...  
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... Inc. **Air bag restraint** including selectively operable venting elements 06932385 ...  
Hendey, Arthur A. Large volume **fire** service water meter 06931946 Cl. ...  
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**Fire-extinguishing fluid flow sensing apparatus for fire** protection ... substrate voltage to a **reference voltage** and provides, when needed, activating ...  
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**Foley And Lardner Suite 500 Patents**

20050225058 - **Airbag** unit comprising a retaining element and supporting element for fixing ... 20050174307 - Current **drive circuit** and image display device ...  
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... **Air bag restraint** systems. ... **Fire** extinguishing systems. ... Starting controller for **airbag** in vehicle, has threshold value modifying unit that changes predetermined ...  
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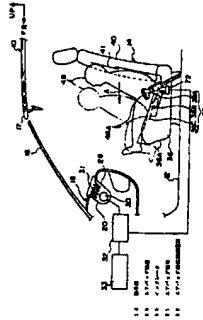
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2001-001775/01

TOYOTA JIDOSHA KK

JP-2000264117-A

**Seating detection sensor for airbag control system of motor vehicle, installs inside passenger seat cushion to detect existence and movement of passenger respectively**



**Novelty:** A sheet shaped detection sensor (38) is arranged inside a cushion (36) of seat (14) adjoining that of a driver. A rear portion sensor (38A, 38B) detects the existence of the passenger and a front portion sensor (38C) detects the movement of the passenger.

**Use:** For airbag control system in motor vehicle .

**Advantage:** Since the sensor is not influenced by reactivity of passengers hand, the movement of the passenger is correctly detectable. Prevents movement to have any influence on the sensor.

**Description of Drawing(s):** The figure shows the schematic side view of the airbag control system.

- Seat 14
- Cushion 36
- Detection sensor 38
- Rear portion sensor 38A, 38B
- Front portion sensor 38C

**Company Code:** TOYT **Publication Date:** 2000.09.26

**Drawing:** 1/6 **Pages:** 10

**Derwent Codes:** S02-H; S03-C06; X22-J07; X22-X06D

**IPC:** B60N 5/00; B60R 21/32

**Derwent Classes:** Q14; Q17; S02; S03; X22

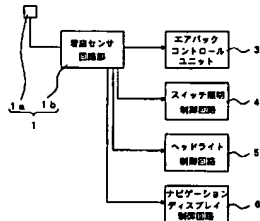
**Latest Priority:** 1999.03.18 1999JP-073358

2001-001776/01

FUJIKURA LTD

JP-2000264122-A

**Control device for e.g. lighting system, airbag of e.g. motor vehicle, has control circuits which respectively perform ON=OFF control of vehicle-mounted apparatuses in relation to sitting detection signal**



**Novelty:** An airbag control unit (3), a switch illumination control circuit (4), a headlight control circuit (5), and a navigation display control circuit (6) respectively perform the ON-OFF control of an airbag, a switch illumination, a headlight, and a navigation display in relation to a sitting detection signal.

**Use:** For e.g. airbag, lighting system of e.g. motor vehicle, train.

**Advantage:** Suppresses unnecessary fuel consumption. Improves operability of vehicle-mounted apparatuses. Also reduces power consumption of system. Cost increase is prevented since seat sensor already utilized is used.

**Detailed Description:** A seat sensor (1) detects the existence of sitting of a person to a seat and outputs the sitting detection signal.

**Description of Drawing(s):** The figure shows the control device.

- Seat sensor 1
- Airbag control unit 3
- Switch illumination control circuit 4
- Headlight control circuit 5
- Navigation display control circuit 6

**Company Code:** FUJD **Publication Date:** 2000.09.26

**Drawing:** 1/2 **Pages:** 6

**Derwent Codes:** S03-C06; X22-B01; X22-B02X; X22-J01; X22-J02E; X22-J07; X22-X06D; X23-A05; X23-A09

**IPC:** B60Q 1/04; B60H 1/00; B60J 1/17; B60Q 3/02; 3/04; B60R 1/06; 11/02; B60S 1/08

**Derwent Classes:** Q12; Q16; Q17; S03; X22; X23

**Latest Priority:** 1999.03.16 1999JP-070931